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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1047-012	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/31385	International filing date (day/month/year) 02 October 2003 (02.10.2003)	Priority date (day/month/year) 03 October 2002 (03.10.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): A01N 25/04, 25/28; B05D and US Cl.: 427/4; 504/117, 363; 47/2; 71/27; 514/772, 773, 944, 975		
Applicant AGROSHIELD, LLC		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

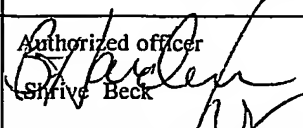
2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30 April 2004 (30.04.2004)	Date of completion of this report 08 March 2005 (08.03.2005)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Shrive Beck Telephone No. (703) 308-0661

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☒ the description:
pages 1-19 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the claims:
pages 20-29, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☐ the drawings:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)

Claims <u>12-14, 28, 29, 73</u>	YES
Claims <u>1-11, 15-27, 30-72, 74-88</u>	NO

Inventive Step (IS)

Claims <u>NONE</u>	YES
Claims <u>1-88</u>	NO

Industrial Applicability (IA)

Claims <u>1-88</u>	YES
Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-11, 15-27, 30-72, 74-88 lack novelty under PCT Article 33(2) as being anticipated by Blum (US 6,180,562).

Blum discloses a method for protecting a plant comprising coating a surface of the plant with an aqueous composition comprising a dispersion of solid particles of polymer by spraying (See column 3, line 57) thereby releasing heat over a range of dropping ambient temperatures beginning at about 320 F to 220 F (See column 3, lines 9-22). The polymer may be a substantially uncrosslinked polymer (See column 3, line 26) or uncrosslinked copolymer (See column 3, line 52-56). The polymer may be a hydrated polymer gel (See column 3, lines 23-24) or a hydrated copolymer gel (See column 3, lines 38-39). The composition further comprises water droplets coated with a hydrated polymer gel (See column 3, lines 30-31) or in the form of a foam (See column 3, lines 33-37) comprising air bubbles having a diameter in the range of from about 100 to about 1000 microns (See column 3, lines 35-37). The polymer is substantially uncrosslinked, or have a relatively low amount of crosslinking (See column 10, lines 37-39). The diameter of the air bubbles in the foam be in the range of from about 10 to about 100 microns (See column 7, lines 59-61). The composition further comprises one or more components selected from the group consisting of micronutrients, macronutrients, pesticides, insecticides, herbicides, rodenticides, fungicides, biocides, plant growth regulators, fertilizers, microbes, soil additives, adhesion promoting-agents, surfactants and freezing point modifiers (See column 3, lines 62+). The hydrated polymer gel is a hydrolyzed polyacrylonitrile comprising acrylic acid and acrylamide moieties (See column 3, lines 52-54) or a hydrolyzed fibrous protein (See column 3, line 45) comprising amino acid and acrylamide moieties (See column 3, lines 47-48) and is selected from the group consisting of hydrolyzed fibronectin and hydrolyzed elastin (i.e. are nanoparticles having molecular weight within 500,000-50,000,000 and diameter within the range of 2-1000 nm inherently) (See column 3, lines 50-51).

Claims 12-14, 28, 29, 73 lack an inventive step under PCT Article 33(3) as being obvious over Blum (US 6,180,562).

Blum fails to teach that the polymer comprises methacrylamide (Claim 12) or isopropylacrylamide (Claim 13, 14, 28, 29, 73). It should be noted that claimed methacrylamide and isopropylacrylamide are similar to acrylamide of Blum except for methyl or isopropyl substituent instead of hydrogen. Thus, methacrylamide and isopropylacrylamide are homologues of acrylamide. Homologues are a class of compounds differing only by a methylene linkages and possessing similar structures. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace acrylamide in Blum with homologues such as methacrylamide and isopropylacrylamide in view of their closely related structures and the resulting expectation of similar properties.

Claims 1-88 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----